(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 7 July 2005 (07.07.2005)

(10) International Publication Number WO 2005/060978 A3

(51) International Patent Classification7: A61P 19/02, 19/06

A61K 33/42,

(21) International Application Number:

PCT/IT2004/000713

(22) International Filing Date:

21 December 2004 (21.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: RM2003A000590

22 December 2003 (22.12.2003)

- (71) Applicant (for all designated States except US): UNIVER-SITÁ DEGLI STUDI DI SIENA [IT/IT]; Via Banchi di Sotto, 55, I-53100 Siena (IT).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MARCOLONGO, Roberto [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). CATENACCIO, Manuela [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). CHINDAMO, Daniela [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). LORENZINI, Sauro [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). SELVI, Enrico [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). CINI, Renzo [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). TAMASI, Gabriella [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). GREGORKIEWITZ, Michele [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). CAMPANA, Alberto

[IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT). CAVALLO, Giovanni [IT/IT]; c/o Universitá degli Studi di Siena, Via Banchi di Sotto, 55, I-53100 Siena (IT).

- (74) Agents: CAPASSO, Olga et al.; De Simone & Partners S.p.A., Via V. Bellini, 20, I-00198 Roma (IT).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 4 August 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

POLYMETAPHOSPHATE BASED FORMULATIONS FOR THERAPY OF MICROCRYSTALLINE

(57) Abstract: Soluble pharmaceutical composition for the treatment of articular pathologies comprising an effective amount of a least one linear or cyclic polymetaphosphate or a soluble and pharmaceutically acceptable salt thereof, and appropriate diluents.

INTERNATIONAL SEARCH REPORT

Interr I Application No PCT/IT2004/000713

CLASSIFICATION OF SUBJECT MATTER PC 7 A61K33/42 A61F IPC 7 A61P19/02 A61P19/06 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) A61K A61P Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, SCISEARCH, CHEM ABS Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X CINI R ET AL: "Dissolution of calcium 1 - 10pyrophosphate crystals by polyphosphates: An in vitro and ex vivo study" ANNALS OF THE RHEUMATIC DISEASES, vol. 60, no. 10, October 2001 (2001-10), pages 962-967, XP002328845 ISSN: 0003-4967 the whole document US 3 541 208 A (CLAY J. DANN SR) 1 - 3, 10X 17 November 1970 (1970-11-17) the whole document 4-8 -/--Further documents are listed in the continuation of box C Patent family members are listed in annex. ° Special categories of cited documents: 'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international "X" document of particular relevance; the claimed invention filing date cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) 'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-ments, such combination being obvious to a person skilled 'O' document referring to an oral disclosure, use, exhibition or other means in the art. document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 20 May 2005 09/06/2005 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswljk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Hornich, E Fax: (+31-70) 340-3016

INTERNATIONAL SEARCH REPORT

Intern al Application No
PCT/IT2004/000713

		PC1/112004/000/13			
C.(Continue Category °	ation) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
Calegory	Citation of occument, with indication, where appropriate, of the relevant passages	resount to canning.			
X	GB 1 132 233 A (HARVEY ASHMEAD; FLOYD R MENCIMER) 30 October 1968 (1968-10-30)	1-3,10			
Y	page 1, left-hand column, line 11 - line 22 right-hand column, line 70 - line 75 page 2, right-hand column, line 107 - line 119 page 19	4-8			
X	US 2002/022052 A1 (DRANSFIELD CHARLES WILLIAM) 21 February 2002 (2002-02-21) paragraph '0126! - paragraph '0140!	1-10			
X	FR 1 077 682 A (MONSANTO CHEMICAL COMPANY) 10 November 1954 (1954-11-10) page 2, left-hand column, paragraphs 2,4 right-hand column, paragraph 1 table	1-10			
X	GB 817 181 A (BRISTOL LABORATORIES INC) 29 July 1959 (1959-07-29) page 2, left-hand column, paragraphs 1,2 right-hand column, paragraphs 1,2 example X	1-10			
X	RYAN L M ET AL: "Stimulation of cartilage inorganic pyrophosphate elaboration by ascorbate" MATRIX 1991 GERMANY, vol. 11, no. 4, 1991, pages 276-281, XP009047873 ISSN: 0934-8832 the whole document	9			
Υ	WO 00/66599 A (OBERTHUER, WALTER; KESEL, ANDREAS, JOHANNES) 9 November 2000 (2000-11-09) page 22, line 23 - line 29	4-10			
Y	US 6 399 093 B1 (PETRUS EDWARD J) 4 June 2002 (2002-06-04) examples 3,4	4-10			

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter: al Application No
PCT/IT2004/000713

				T			
	atent document d in search report		Publication date		Patent family member(s)		Publication date
US	3541208	Α	17-11-1970	NONE			
GB	1132233	A	30-10-1968	NONE			
US	2002022052	A1	21-02-2002	NONE			
FR	1077682	Α	10-11-1954	NONE			
GB	817181	Α	29-07-1959	MY	7561	Α	31-12-1961
WO	0066599	Α	09-11-2000	AU	3826099		23-11-1999
				AU	4559000		17-11-2000
				BR	9910207		09-01-2001
				CA	2330811		11-11-1999
				CA	2371653		09-11-2000
				MO	0066599		09-11-2000
				EP	1173451		23-01-2002
				EP	1075481		14-02-2001
				HU	0101890		28-10-2001
				JP	2002513795		14-05-2002
				JР	2002543209		17-12-2002
				PL	343863		10-09-2001
				US	6369042	B1	09-04-2002
US 	6399093	B1	04-06-2002	NONE			